

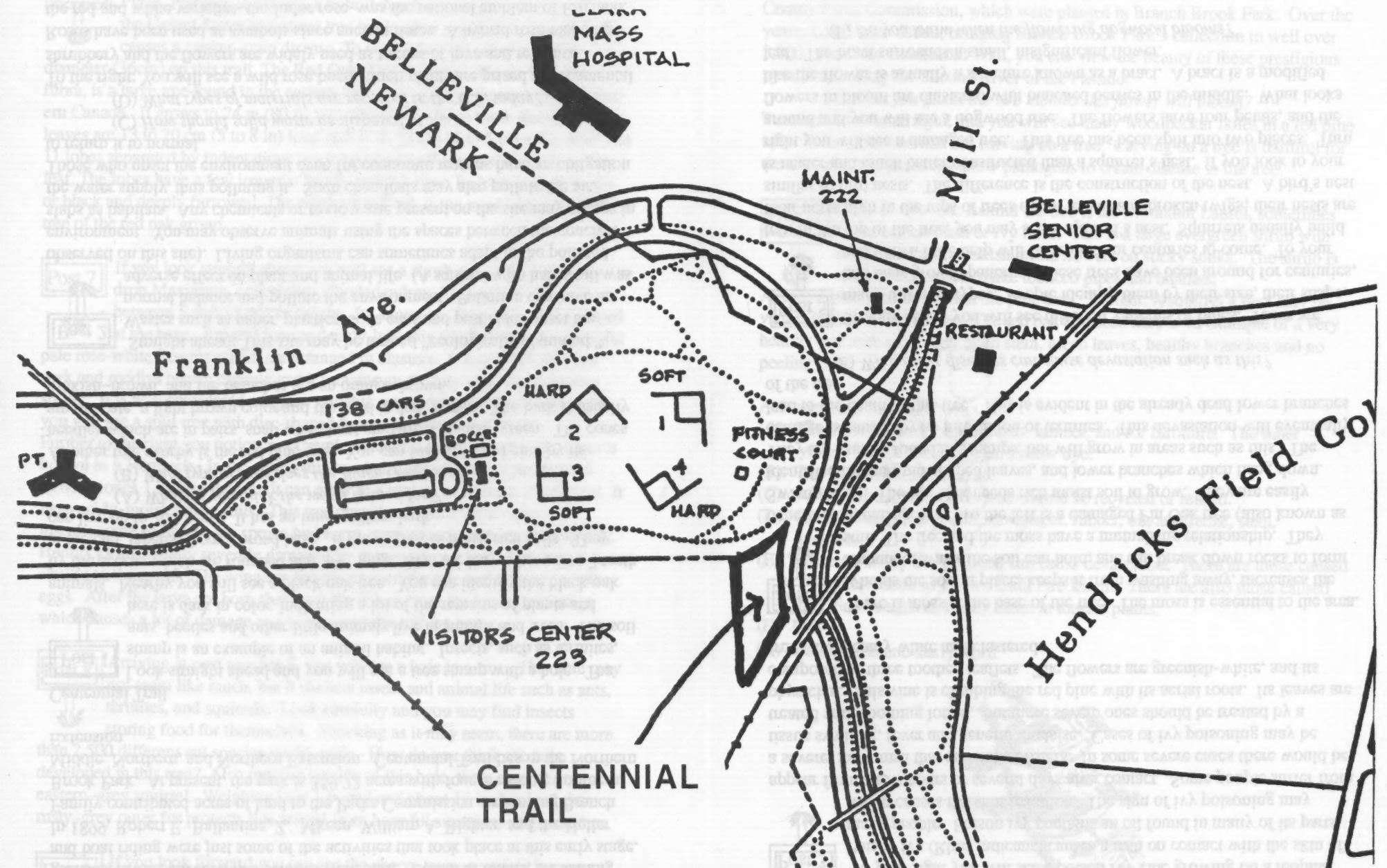
**Interpretive Guide
CENTENNIAL TRAIL
Branch Brook Park
Newark, NJ**



Centennial Trail, in historic Branch Brook Park, is unique; it is the first educational trail designed and built completely by youth. High school students from Chad Science Academy, working with the Greater Newark Conservancy, researched and wrote the text for the trail brochure based on their field work. The installation was done by youth volunteers from around the state, working with the Newark students and members of the Student Conservation Association.

Centennial Trail was so named to commemorate the centennial celebration of the Essex County Parks System, the nation's oldest county park system. Branch Brook Park was selected as the trail site because it is the oldest, created in 1895 as the first county park.

On Earth Day '95, the 25th anniversary of Earth Day, youth came together to install the trail as a permanent reminder of the need to protect the environment and educate ourselves about the interdependence of the local and global ecosystem. We hope you will take the time to walk the trail, and use this guide to learn a little about the remarkable variety of trees, plants, animals, and insects which inhabit this small corner of the park.



To learn more about the plants and animals which live along Centennial Trail, please open this brochure and read the text which accompanies each trail marker.

Branch Brook Park

This beautiful park, located in Newark, N.J., was created by the Olmsted Brothers Landscape Architectural Firm, who also designed Central Park in New York City, in 1895. Branch Brook Park began with sixty acres of mostly swampland, which was drained and filled, and a lake was created. Flowers, gardens, lawns, terraces, and bridges were built. Concerts, tennis, ice skating and boat riding were just some of the activities that took place at this early stage. In 1899, Robert F. Ballantine, Z. Mkeen, William A. Righter, and the Heller Family contributed acres of land to the Parks Commission, expanding Branch Brook Park. At present, the park is 359.72 acres with four divisions: Southern, Middle, Northern, and Northern Extension. Centennial Trail lies in the Northern Extension.

Centennial Trail

Post 1

Look straight ahead and you will see a tree stump with a hole. The stump is an example of an animal habitat. Insects, such as termites, ants, beetles and other little animals live in stumps and trees. The soil here is dark in color, indicating a lot of the remains of plants and animals. Nearby you will see a black oak tree. You can identify the black oak by the acorns which are rounded and 3/4" long. Also the leaves have 5 to 7 teeth at the end, tapered from a broad base. It grows best in moist rich soils. They can live up to 200 years. It has an inner yellow bark.

(A) *What do you think the wood is used for?*

(B) *What type of seed does the Black Oak have?*

Another tree nearby is the red pine tree. You can identify a red pine by its needles which are in pairs, snap when bent, and are a blueish-green. The cones are delicate, a light brown color and the seed is dark brown. The bark is usually pinkish-brown, and the branches are an orange-brown.

Post 2

Straight ahead: This site may be termed "ecologically disturbed." Wastes such as paper, plastics, soda cans and pesticides upset the normal balance and pollute the environment. Pollution can have an adverse effect on plant and animal life. (A squirrel with half a tail was observed on this site). Living organisms can sometimes adapt to the polluted environment. You may observe animals using the spaces between the concrete slabs as habitats. Any chemicals or toxic waste present on the site may escape in the water supply, thus polluting it. Such chemicals may also pollute the air. Those who upset the environment even for economic reasons have an obligation to return it to normal.

(C) *How should solid waste be disposed of?*

(D) *What types of materials are recycled in the U.S. today?*

To the right: You will see a wild rose bush. Such plants are prized as ornamental shrubbery and the flowers are widely used as tokens of love and romance. Roses have been used as symbols since ancient times. A hybrid rose blending the red and white varieties—the Judor rose—was the national emblem of England.

Post 6

Straight ahead you will find the London Plane tree. The London Plane, *Platanus acerifolia*, a hybrid, has been planted extensively in the United States as a street tree but is often attacked by a fungus that causes a canker-stain disease. To your left is the biggest tree in diameter (36cm) on this trail, The Red Oak. The northern red oak, *Quercus rubra*, is a large tree found in the eastern half of the United States and southeastern Canada. It grows to 24 m (80 ft) high and 1 m (3 ft) in trunk diameter. Its leaves are 13 to 20 cm (5 to 8 in) long and 10 to 13 cm (4 to 5 in) wide, with 7 to 11 lobes separated by indentations reaching about halfway to the middle of the leaf. The lobes have a few irregular bristle on their tips. Its bark is dark brown or black and deeply furrowed. The northern red oak is the most important timber tree of the red oak group.

Post 7

If you look straight ahead you will see a shrub called the Rhododendron Maximum, or Rosebay Rhododendron. This shrub can grow between 5 and 12 feet in height. Its leaves are long and wedge shaped at the base. Around June and early July this shrub reveals its beautiful pale rose-white flowers which are arranged in clusters. It has a fruit that is a dark and reddish brown capsule and it remains on the tree until the following spring. It is also considered a highly valuable ornamental shrub. To the right you will see a split tree with disc-shaped fungus growing up its bark. Further to the right you notice an extremely graceful evergreen tree. This tree is known as a Hemlock. In the spring this tree has light yellow-green leaves & slender cones 1 inch in length. It can grow in a variety of adverse conditions. It likes acid, moist, sandy soils. This tree provides a home for a variety of insects; some examples are spruce budworm, gypsy moth, and hemlock sawfly. Hemlocks are usually severely damaged by the woolly adelgid. This insect is similar to the aphid. The wingless female stays in the tree and lays up to 300 eggs. After the larva are born they suck the juices from the leaves and twigs which causes a lot of damage and will eventually kill the tree.

Post 8

Arriving at post number 8, you will see a hole in a tree. This hole may not seem like much, but it shelters insect and animal life such as ants, termites, and squirrels. Look carefully and you may find insects storing food for themselves. Shocking as it may seem, there are more than 2,500 different ant species world-wide. How do you think the hole developed in this tree? Also running outside of this hole, there may be an eastern-grey squirrel. Weighing in at 1 pound and about 10 inches long, its rusty-grey outer fur protects this animal from harmful situations and scratches.

Post 9

If you look forward you can see the cherry trees, a variety known as the Yoshino cherry. A native of Japan, the Yoshino cherry was introduced in Branch Brook park in 1902. The beautiful flowers are single, white to pink and slightly fragrant, the flowers bloom once a year. The park is world renowned for its collection of flowering Cherry trees.

Other countries have used roses on their seals, awards, currency and postage stamps. All roses belong to the genus Rosa, a member of the family Rosaceae. The genus Rosa contains about 200 species and thousands of hybrids. Roses have a beautiful fragrance. Rose oil is extracted from their leaves.

Post 3

To your right you will see a poison ivy vine growing on a red pine. Poison ivy (*Rhus radicans*) causes a rash on contact with the skin of many people. Poison ivy contains an oil found in many of its parts, which causes the skin irritation. The sign of ivy poisoning may appear from a few hours or several days after contact. Some people suffer from a severe, itchy rash that develops blisters. In some severe cases there would be tissue swelling, fever and general malaise. Cases of ivy poisoning may be treated with soothing lotion, but more severe ones should be treated by a physician. This vine is climbing the red pine with its aerial roots. Its leaves are composed of three toothed leaflets. The flowers are greenish-white, and its fruits are creamy white and clustered.

Post 4

There is moss at the base of the tree. The moss is essential to the area. It holds the soil in place, keeps it from washing away, increases the amount of water the soil can hold, and can break down rocks to form soil. The tree and the moss have a mutualistic relationship. They benefit from one another. To the left is a damaged Pin Oak tree (also known as Swamp Oak). The Pin Oak needs rich moist soil to grow. They are easily identified by their pin-shaped leaves, and lower branches which hang down. They are usually found in swamps, but will grow in areas such as this. The damage is caused by an infestation of termites. This devastation will eventually lead to the death of this tree. This is evident in the already dead lower branches of the tree.

(E) *What other diseases can cause devastation such as this?*

Post 5

Straight ahead you will see different varieties of pines. There are many different types. People identify them by their size, their shape, and their growth patterns. These trees have been around for centuries, and with a little help will be around for centuries to come. To your left, in the top of the tree, you may see a squirrel's nest. Squirrels usually build their nests high in the tops of trees out of leaves and broken twigs; their nests are similar to bird nests. The difference is the construction of the nest. A bird's nest is neater and much better constructed than a squirrel's nest. If you look to your right you will see a damaged tree. This tree has been split into two pieces. Turn around and you will see a dogwood tree. The flowers have four petals, and the flowers in bloom are clustered with bunched berries in the middle. What looks like the flower is actually a structure known as a bract. A bract is a modified leaf. The bract surrounds a small, insignificant flower.

(F) *Do you know when the flowering dogwood blooms?*

Caroline Bamberger-Fuld donated 2,050 Japanese Cherry trees to the Essex County Parks Commission, which were planted in Branch Brook Park. Over the years, 1,500 were added, bringing Branch Brook Park's collection to well over 3,000. From the Centennial Trail, you can view the beauty of these prestigious trees overlooking the Second River of the Passaic.

(G) *Can you guess the two months this flower will bloom?*

Turn around to your right, and you will see many woodpecker holes in a red pine tree. To the left, you will see carving on a tree. Carving on a tree is harmful for the tree, because openings allow pathogens to create disease in the tree.

Post 10

Post 10 - To left: Behind the tree is the Mountain Laurel, sometimes called calico bush or ivy bush. This is a large evergreen shrub with clusters of deep pinkish-white flowers on sticky stalks. The shrub is used as fuel and to make tobacco pipes and handles.

Ahead: A nest may be seen in the pine tree. To right: A squirrel's nest may be visible high in the pine tree. The red oak tree seen here is an example of a very healthy tree with its woody main stem, green leaves, healthy branches and no peeling bark.

Answers

- (A) The wood is used for shipyards, lumber, and for furniture. The inner yellow bark is used to make yellow dye.
- (B) The Black Oak has acorns.
- (C) As far as possible, solid waste should be recycled or reused.
- (D) Glass, plastic, aluminum, newspaper, rubber, oil, antifreeze, steel, batteries...
- (E) There are many diseases that can cause devastation. There are those caused by bacteria such as Crown Gall, Fire Blight. There are also those caused by viruses such as Bushy Stunt in tomato plants.
- (F) May
- (G) Late March and Early April



Centuries Before Japanese Tea was Imported to the U.S.

Earth Day '95: a Celebration in Branch Brook Park was sponsored by the Greater Newark Conservancy, the City of Newark, and the Essex County Parks System Centennial Celebration. Centennial Trail is a project of the Greater Newark Conservancy.

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